General

Guideline Title

Management of ingested foreign bodies and food impactions.

Bibliographic Source(s)

ASGE Standards of Practice Committee, Ikenberry SO, Jue TL, Anderson MA, Appalaneni V, Banerjee S, Ben-Menachem T, Decker GA, Fanelli RD, Fisher LR, Fukami N, Harrison ME, Jain R, Khan KM, Krinsky ML, Maple JT, Sharaf R, Strohmeyer L, Dominitz JA. Management of ingested foreign bodies and food impactions. Gastrointest Endosc. 2011 Jun;73(6):1085-91. [85 references] PubMed

Guideline Status

This is the current release of the guideline.

This release updates a previously published guideline: Eisen GM, Baron TH, Dominitz JA, Faigel DO, Goldstein JL, Johanson JF, Mallery JS, Raddawi HM, Vargo JJ 2nd, Waring JP, Fanelli RD, Wheeler-Harbough J. Guideline for the management of ingested foreign bodies. Gastrointest Endosc 2002 Jun;55(7):802-6. [65 references]

Recommendations

Major Recommendations

Definitions for the quality of the evidence (++++, +++O, ++OO, and +OOO) and for the strength of the recommendations ("recommends" or "suggests") are provided at the end of the "Major Recommendations" field.

1. The Practice Committee suggests avoiding contrast radiographic examinations with before removal of foreign objects. (+OOO)
2. The Practice Committee suggests an otorhinolaryngology consultation for foreign bodies at or above the level of the cricopharyngeus. (+OOO)
3. The Practice Committee recommends emergent removal of esophageal food bolus impactions and foreign bodies in patients with evidence of complete esophageal obstruction. (++OO)
4. The Practice Committee suggests that acceptable methods for the management of esophageal food impactions include en bloc removal, piecemeal removal, and the gentle push technique. (+++O)
5. The Practice Committee suggests endoscopic removal of all objects with a diameter larger than 2.5 cm from the stomach. (+OOO)
6. The Practice Committee suggests endoscopic removal of sharp-pointed objects or objects longer 6 cm in the proximal duodenum or above. (++OO)
7. The Practice Committee recommends emergent removal of disk batteries in the esophagus. (++OO)
8. The Practice Committee recommends urgent removal of all magnets within endoscopic reach. (++OO) For those beyond endoscopic reach, close observation and surgical consultation for nonprogression through the gastrointestinal tract is advised.

9. The Practice Committee suggests that coins within the esophagus may be observed in asymptomatic patients but should be removed within 24 hours of ingestion if spontaneous passage does not occur. (++OO)
10. The Practice Committee recommends against endoscopic removal of drug-containing packets. (++OO)

Definitions:

Grading of Recommendations Assessment, Development, and Evaluation (GRADE) System for Rating the Quality of Evidence for Guidelines

Quality of Evidence	Definition	Symbol
High Quality	Further research is very unlikely to change confidence in the estimate of effect	++++
Moderate Quality	Further research is likely to have an important impact on confidence in the estimate of effect and may change the estimate	+++O
Low Quality	Further research is very likely to have an important impact on confidence in the estimate of effect and is likely to change the estimate	++OO
Very Low Quality	Any estimate of effect is very uncertain	+OOO

Adapted from Guyatt GH, Oxman AD, Vist GE, et al. GRADE: an emerging consensus on rating quality of evidence and strength of recommendations. BMJ 2008;336:924-6.

Recommendation Strength

The strength of individual recommendations is based both on the aggregate evidence quality and an assessment of the anticipated benefits and harms. Weaker recommendations are indicated by phrases such as "the Practice Committee suggests," whereas stronger recommendations are typically stated as "the Practice Committee recommends."

Clinical Algorithm(s)

None provided

Scope

Disease/Condition(s)

Foreign object ingestion and/or food bolus impaction

Guideline Category

Diagnosis

Evaluation

Management

Treatment

Clinical Specialty

Emergency Medicine

Gastroenterology

Internal Medicine

Otolaryngology

Pediatrics

Radiology

Surgery

Intended Users

Hospitals

Physicians

Guideline Objective(s)

To provide information that may assist endoscopists in providing care to patients with possible foreign object ingestion and/or food bolus impaction

Target Population

Patients with possible foreign object ingestion and/or food bolus impaction

Interventions and Practices Considered

Diagnosis/Evaluation

1. Physical examination
    - Assessment of ventilation, airway compromise, and risk of aspiration
    - Evaluation of signs and symptoms
2. Biplane radiography
3. Contrast examination (considered, but not recommended)
4. Computed tomography (CT) scan with 3-dimensional (3-D) reconstruction
5. Use of handheld metal detectors
6. Endoscopic evaluation
7. Follow-up radiography

Management

1. Rigid esophagoscopy
2. Flexible endoscopy
3. Endotracheal intubation
4. Anesthesia
    - General
    - Conscious sedation
5. Other equipment used to remove objects
    - Rat tooth forceps
    - Alligator forceps
    - Polypectomy snare
    - Polyp grasper
    - Dormier basket
    - Retrieval net

    - Overtubes of esophageal and gastric lengths
    - Foreign body protector hood
    - Magnetic probes
    - Friction-fir adapters
    - Banding caps
6. Proteolytic enzyme (i.e., papain) (considered, but not recommended)
7. Glucagon intravenous
8. Emetics (considered, but not recommended)
9. Cathartics (considered, but not recommended)
10. Acid suppression (considered, but not recommended)
11. Balloon enteroscopy
12. Surgical intervention

Major Outcomes Considered

- Symptoms of foreign body ingestion or food bolus impaction
- Effectiveness of diagnostic tests
- Complications of foreign body ingestion and food bolus impaction
- Complications of procedures to remove a foreign body or food bolus
- Success rate of removal of foreign object or food impaction

Methodology

Methods Used to Collect/Select the Evidence

Hand-searches of Published Literature (Primary Sources)

Hand-searches of Published Literature (Secondary Sources)

Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence

In preparing this guideline, a search of the medical literature was performed by using PubMed. Studies or reports that described fewer than 10 patients were excluded from analysis if multiple series with more than 10 patients addressing the same issue were available. Additional references were obtained from the bibliographies of the identified articles and from recommendations of expert consultants. The updated literature time frame is 1990 to 2011.

Number of Source Documents

Not stated

Methods Used to Assess the Quality and Strength of the Evidence

Weighting According to a Rating Scheme (Scheme Given)

Rating Scheme for the Strength of the Evidence

Grading of Recommendations Assessment, Development, and Evaluation (GRADE) System for Rating the Quality of Evidence for Guidelines

Quality of Evidence	Definition	Symbol
High Quality	Further research is very unlikely to change confidence in the estimate of effect	++++
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Low Quality	Further research is very likely to have an important impact on confidence in the estimate of effect and is likely to change the estimate	++OO
Very Low Quality	Any estimate of effect is very uncertain	+OOO

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Methods Used to Analyze the Evidence

Systematic Review

Description of the Methods Used to Analyze the Evidence

Not stated

Methods Used to Formulate the Recommendations

Expert Consensus

Description of Methods Used to Formulate the Recommendations

Guidelines for appropriate use of endoscopy are based on a critical review of the available data and expert consensus at the time that the guidelines are drafted.

Rating Scheme for the Strength of the Recommendations

The strength of individual recommendations is based both on the aggregate evidence quality and an assessment of the anticipated benefits and harms. Weaker recommendations are indicated by phrases such as "The Practice Committee suggests," whereas stronger recommendations are typically stated as "The Practice Committee recommends."

Cost Analysis

A formal cost analysis was not performed and published cost analyses were not reviewed.

Method of Guideline Validation

Internal Peer Review

Description of Method of Guideline Validation

This document is a product of the Standards of Practice Committee. The document was reviewed and approved by the Governing Board of the

American Society for Gastrointestinal Endoscopy.

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

The type of supporting evidence is identified and graded for each recommendation (see the "Major Recommendations" field).

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

Appropriate management of foreign body ingestion and food bolus impaction to improve outcomes and reduce the rate of complications

Potential Harms

- Because of the risk of esophageal injury during insertion, overtube use is less common in pediatric patients, although newer, softer tubes may help to mitigate this risk in older children.
- Two large published series using the push technique for food impaction reported no perforations in a total of 375 patients. These series describe gentle pressure applied to the center of the food bolus. When advancement is unsuccessful, reduction of bolus size by piecemeal removal was performed, followed again by gentle pressure. Perforation may still be a risk if excessive force is applied with this technique.
- In most circumstances, it is considered safe to perform dilation after food bolus extraction when an esophageal stricture is present to reduce the risk of recurrence. However, caution is warranted after prolonged impaction or if eosinophilic esophagitis is suspected.
- Endoscopic retrieval of sharp objects may be accomplished with retrieval forceps, a retrieval net, or a polypectomy snare. The risk of mucosal injury during retrieval can be minimized by orienting the object with its point trailing during extraction, by using an overtube, or by fitting the endoscope with a protector hood.

Qualifying Statements

Qualifying Statements

- Further controlled clinical studies may be needed to clarify aspects of this guideline. This guideline may be revised as necessary to account for changes in technology, new data, or other aspects of clinical practice.
- This guideline is intended to be an educational device to provide information that may assist endoscopists in providing care to patients. This guideline is not a rule and should not be construed as establishing a legal standard of care or as encouraging, advocating, requiring, or discouraging any particular treatment. Clinical decisions in any particular case involve a complex analysis of the patient's condition and available courses of action. Therefore, clinical considerations may lead an endoscopist to take a course of action that varies from these guidelines.

Implementation of the Guideline

Description of Implementation Strategy

An implementation strategy was not provided.

Implementation Tools

Staff Training/Competency Material

For information about availability, see the *Availability of Companion Documents* and *Patient Resources* fields below.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Getting Better

IOM Domain

Effectiveness

Timeliness

Identifying Information and Availability

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Adaptation

Not applicable: The guideline was not adapted from another source.

Date Released

2002 Jun (revised 2011 Jun)

Guideline Developer(s)

American Society for Gastrointestinal Endoscopy - Medical Specialty Society

Source(s) of Funding

American Society for Gastrointestinal Endoscopy

Guideline Committee

Standards of Practice Committee

Composition of Group That Authored the Guideline

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Financial Disclosures/Conflicts of Interest

The following authors disclosed financial relationships relevant to this publication: Dr. Ben-Menachem: consultant to Boston Scientific; Dr. Decker: consultant to Facet Biotech; Dr. Harrison: consultant to Fujinon. All other authors disclosed no financial relationships relevant to this publication.

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Guideline Availability

Electronic copies: Available from the American Society for Gastrointestinal Endoscopy Web site .

Print copies: Available from the American Society for Gastrointestinal Endoscopy, 1520 Kensington Road, Suite 202, Oak Brook, IL 60523

Availability of Companion Documents

The following is available:

- Management of ingested foreign bodies and food impactions. CME course. Available from the American Society for Gastrointestinal Endoscopy Web site .

Patient Resources

None available

NGC Status

This NGC summary was completed by ECRI on March 23, 2005. The information was verified by the guideline developer on March 31, 2005. This NGC summary was updated by ECRI Institute on September 13, 2012.

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